

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016245 A3

(51) International Patent Classification⁷: **A61K 31/4745**,
31/437, C07D 471/04, A61K 29/00, 35/00, 37/00

(US). FERGUSON, Colin, G. [CA/US]; 155 1st Ave #6,
Salt Lake City, Utah 84103 (US).

(21) International Application Number:
PCT/US2004/018752

(74) Agents: WESTERN, M., Wayne et al.; Thorpe North &
Western LLP, P.O.Box 1219, Sandy, UT 84091-1219 (US).

(22) International Filing Date: 14 June 2004 (14.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/478,221 13 June 2003 (13.06.2003) US

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(71) Applicants (*for all designated States except US*): ECHE-
LON BIOSCIENCES INCORPORATED [US/US]; 675
South Arapen Drive, Suite 302, Salt Lake City, UT 84108
(US). COMGENEX, RT [HU/HU]; Bem RPK 33-34,
H-1027 Budapest (HU).

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): DREES, Beth, E.
[US/US]; 603 Sixth Avenue, Salt Lake City, UT 84103
(US). CHAKRAVARTY, Leena [IN/US]; 9462 South
Hunts End Drive, Sandy, UT 84092 (US). PRESTWICH,
Glenn, D. [US/US]; 1500 South Sunnydale Lane, Salt
Lake City, UT 84108 (US). DORMAN, Gyorgy [HU/HU];
Kondorsi UT, H-1119 Budapest (HU). KAVECZ, Mar-
iann [HU/HU]; Erdody-Palfy Tamas U. 46, H-8100
Varpalota (HU). LUKACS, Andras [HU/HU]; Wesse-
lenyl, U. 69 1/3, H-1077 Budapest (HU). URGE, Laszlo
[HU/HU]; Kerekgyarto U.3, H-1147 Budapest (HU).
DARVAS, Ferenc [HU/HU]; Zapor U. 11/B., H-1034
Budapest (HU). RZEPECKI, Piotr, W. [PL/US]; 241
North Main Street Apt 214, Salt Lake City, Utah 84103

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
2 June 2005

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: COMPOUNDS HAVING INHIBITIVE ACTIVITY OF PHOSPHATIDYLINOSITOL 3-KINASE AND METHODS OF USE THEREOF

(57) Abstract: Compounds inhibiting phosphatidylinositol 3-kinase (PI 3-K) activities and methods of preparing and using thereof in treating diseases are disclosed. Compounds inhibiting PI 3-K activity and methods of using PI 3-K inhibitory compounds to inhibit cancer cell growth or to treat disorders of immunity and inflammation, in which PI 3-K plays a role in leukocyte function are also provided.

WO 2005/016245 A3

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016245 A2

(51) International Patent Classification⁷: **A61K**
(21) International Application Number:
PCT/US2004/018752

North Main Street Apt 214, Salt Lake City, Utah 84103
(US). **FERGUSON, Colin, G.** [CA/US]; 155 1st Ave #6,
Salt Lake City, Utah 84103 (US).

(22) International Filing Date: 14 June 2004 (14.06.2004)

(74) Agents: **WESTERN, M., Wayne** et al.; Thorpe North &
Western LLP, P.O.Box 1219, Sandy, UT 84091-1219 (US).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/478,221 13 June 2003 (13.06.2003) US

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(71) Applicants (*for all designated States except US*): **ECHE-
LON BIOSCIENCES INCORPORATED** [US/US]; 675
South Arapleen Drive, Suite 302, Salt Lake City, UT 84108
(US). **COMGENEX, RT** [HU/HU]; Bem RPK 33-34,
H-1027 Budapest (HU).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **DREES, Beth, E.**
[US/US]; 603 Sixth Avenue, Salt Lake City, UT 84103
(US). **CHAKRAVARTY, Leena** [IN/US]; 9462 South
Hunts End Drive, Sandy, UT 84092 (US). **PRESTWICH,
Glenn, D.** [US/US]; 1500 South Sunnysdale Lane, Salt
Lake City, UT 84108 (US). **DORMAN, Gyorgy** [HU/HU];
Kondorsi UT, H-1119 Budapest (HU). **KAVECZ, Mar-
lann** [HU/HU]; Erdody-Palfy Tamas U. 46, H-8100
Varpalota (HU). **LUKACS, Andras** [HU/HU]; Wesse-
lenyl, U. 69 1/3, H-1077 Budapest (HU). **URGE, Laszlo**
[HU/HU]; Kerekgyarto U.3, H-1147 Budapest (HU).
DARVAS, Ferenc [HU/HU]; Zapor U. 11/B., H-1034
Budapest (HU). **RZEPECKI, Piotr, W.** [PL/US]; 241

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished
upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: COMPOUNDS HAVING INHIBITIVE ACTIVITY OF PHOSPHATIDYLINOSITOL 3-KINASE AND METHODS OF USE THEREOF

(57) Abstract: Compounds inhibiting phosphatidylinositol 3-kinase (PI 3-K) activities and methods of preparing and using thereof in treating diseases are disclosed. Compounds inhibiting PI 3-K activity and methods of using PI 3-K inhibitory compounds to inhibit cancer cell growth or to treat disorders of immunity and inflammation, in which PI 3-K plays a role in leukocyte function are also provided.

WO 2005/016245 A2